UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,683	01/24/2002	Kiyokazu Nishioka	29287/126	1063

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EXAMINER
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ART UNIT	PAPER NUMBER
2126	7

DATE MAILED: 09/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

		Application No.		Applicant(s)	
Office Action Summary		10/053,683		NISHIOKA ET AL.	
		Examiner		**Art Unit**	
		VAN H NGUYEN		2126	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>24 January 2002</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-4</u> is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-4</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. <u>08/913,840</u>.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>01/24/02</u>.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

1.   Claims 1-4 are presented for examination.

2.   The cross reference related to the application cited in the specification must be updated

(i.e., update the relevant status, with patent numbers where appropriate, on the preliminary

amendment A page 1). Correction is required.

Specification

3.   The title of the invention is not descriptive. A new title is required that is clearly

indicative of the invention to which the claims are directed.

4.   The abstract of the disclosure is objected to because it can not have two paragraphs.

Correction is required. See MPEP § 608.01(b).

Claim Objections

5.   Claim 2 is objected to because of the following informalities:

"said computer devices has" (claim 2, line 13) should read "said computer devices have"

Appropriate correction is required.

Double Patenting

6.   The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. CIT. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re van Ornurn, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Uogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington,418 F.2d 528, 163 USPQ 644 (CCPA 1969).

7.   A timely filed terminal disclaimer in compliance with 37 C.F.R. ' 1.321(b) would overcome an actual or provisional rejection on this ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 C.F.R. ' 1.78(d).

8.   Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9.   Claim 1 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of.**U.S. Patent 6,401,190** in view of **Cook** (U.S. 5,301,340). Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1of instant application and claim 1 of patent'190 are both claiming a processor; a memory for storing an instruction code; an instruction code holding means for holding the instruction code read from the memory; a plurality of computing units; a register file. The difference between the instant application and patent '190 is the instant application further recites the use of an access port register file being shared by the plurality of

computing devices. Cook teaches the use of an access port register file being shared by the

plurality of computing devices (fig.6 and associated text). It would have been obvious to a

person of ordinary skill in the art at the time the invention was made to combine the teachings of

Cook with patent '190 because Cook's teachings would have provided the capability for a

reduction in the complexity of the register file management while reducing memory size

requirements.

10.   As to the remaining claims 2-4, they are also rejected under obvious type double

patenting as stated in claim 1 above.

Claim Rejections - 35 USC § 112

11.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12.   Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention.

The following phrases lack antecedent basis:

(i) "said plurality of computing devices" (claim 1, line 7 and claim 2, line 7)

(ii) "said register file" (claim 1, line 8 and claim 2, line 8)

Claim Rejections - 35 USC § 103

13.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth
> in section 102 of this title, if the differences between the subject matter sought to be patented and the prior
> art are such that the subject matter as a whole would have been obvious at the time the invention was made
> to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be
> negatived by the manner in which the invention was made.

> This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the
> examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions
> covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37
> CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later
> invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35
> U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14.   Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Keckler et al.**

(U.S. 5,574,939) in view of **Cook** (U.S. 5,301,340).

15.   The Keckler and Cook references were cited by Applicant in the IDS filed 01/24.02.

16.   As to claim 1, Keckler teaches the invention substantially as claimed including a

processor (see the abstract), comprising:

    a memory for storing an instruction code and data (e.g., figs. 2-4);

    an instruction code holding means for holding a plurality of instruction codes read from

the memory (col.2, lines 21-26);

    a plurality of computing units operating in parallel according to the plurality of

instruction codes held in the instruction code holding means (col.2, lines 3-25);

each of the plurality of computing devices reading/writing a content of the register file

through a corresponding access port for computation (col.2, lines 61-67 and figs. 2-3); and

a plurality of data memory banks each operated with at least one of the computing

devices having means for issuing an instruction to load/store data to/from the access port register

file, independently from other data memory banks (col.4, lines 47-61).

Keckler does teach the use of an access port register file and the plurality of computing

devices, but does not teach an access port register file being shared by the plurality of computing

devices.

Cook teaches the use of an access port register file being shared by the plurality of

computing devices (fig.6 and associated text).

It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to combine the teachings of Cook with Keckler because Cook's teachings

would have provided the capability for a reduction in the complexity of the register file

management while reducing memory size requirements.

17.   As to claim 2, the rejection of claim 1 above is incorporated herein in full. Additionally,

Keckler further teaches at least an integer computing device, and a computing device operating

operands including data other than integers (col.4, lines 47-52).

18.   As to claim 3, Keckler teaches at least one of the computing devices can execute a data

transfer instruction for transferring data between the memory and the register file (col.3, lines 1-

3).

19.   As to claim 4, it includes the same subject matter as in claim 3 above, and is similarly

rejected under the same rationale.

Conclusion

20.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Sharangpani et al. (U.S. 5367650) teaches "Method and apparatus for parallel exchange operation in a pipelined processor."

- Ishida et al. (U.S. 5293500) teaches "Parallel processing method and apparatus."

- Ishida et al. (U.S. 5226166) teaches "Parallel operation processor with second command unit."

- Slavenburg et al. (U.S. 5450556) teaches "VLIW processor which uses path information generated by a branch control unit to inhibit operations which are not on a correct path."

- Steven et al. "iHARP: a multiple instruction issue processor" 1992 IEEE, pp. 439-449.

- Findlay et al. "HARP: a VLIW RISC processor" 1991 IEEE, pp. 368-372.

21.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to VAN H. NGUYEN whose telephone number is (703) 306-5971. **After mid-October, 2004, the examiner can be reached at (571) 272-3765.** The examiner can normally be reached on Monday-Thursday from 8:30AM - 6:00PM. The examiner can also be reached on alternative Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (703) 305-9678.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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